OVER-DWELL PROTECTION CIRCUIT FOR AN AUTOMOTIVE IGNITION CONTROL SYSTEM

ABSTRACT OF THE DISCLOSURE

An ignition control circuit (12) is responsive to a control signal (ESTC) to apply a drive signal (GD) to a power switching device (22) to conduct ignition coil current (I_C) therethrough. A resistor (R_S) included within the circuit (12) receives, and dissipates heat generated by, the coil current (I_C). The circuit (12) includes a first transistor (Q_{HOT}) positioned adjacent to the resistor (R_S) such that an operating temperature thereof is near that of the resistor (R_S) , and a second transistor (Q_{REF}) positioned remote from the resistor (R_S) and having an operating temperature defining a reference temperature. The first and second transistors (Q_{HOT}, Q_{REF}) are configured to produce an output voltage (V_{OUT}) proportional to a difference in operating temperatures thereof, and a latch circuit (L1) disables the control signal (ESTC) to thereby turn off the power switching device (22) when the output voltage (V_{OUT}) difference exceeds a reference voltage (V_{REF}).